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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,904	02/23/2004	Yi Ma	008830	6141

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EXAMINER

BREWSTER, WILLIAM M

ART UNIT PAPER NUMBER

2823

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,904

Applicant(s)

MA ET AL.

Examiner

William M. Brewster

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/04, 4/20/05, 6/20/05, 07/25/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

Examiner has reviewed and considered the IDSes filed on 5 April 2004, 25 April 2005, 20 June 2005, 25 July 2005, all 8 pages listing close to 100 references.

Examiner notes that such lengthy IDSes, including the ones filed in this application contains many references that do not read on the claims and many that may not even contain information pertinent to the specification.

Such IDSes are not without their consequences including: 1) reducing the already limited time examiners are allowed for searching, 2) increasing pendency, 3) depressing examiner corps morale making it harder to retain qualified examiners, 4) perhaps giving judges reason to create new exceptions in case law to USPTO IDS practice, and 5) providing more evidence and calls for bright-line limits on the number of references filed, which if implemented would probably be more restrictive than the self-regulated patent bar would impose on itself.

With all this at stake, examiner urges the applicant's representatives to practice greater selectivity and economy when filing IDSes.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 9, 10, 25, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida, US Patent No. 5,966,605.

Ishida anticipates, limitations from claims 1, 9, 25, in fig. 2A, a method for annealing a doped layer on a substrate 50, comprising:
depositing a polycrystalline layer, containing a lattice, 56 to a gate oxide layer, to the substrate;
in fig. 2B, implanting the polycrystalline layer with a dopant, labeled by arrows, to form a doped polycrystalline layer, col. 3, lines 35-44;
exposing the doped polycrystalline layer to a rapid thermal anneal, col. 3, lines 61-66;
and exposing the doped polycrystalline layer to a laser anneal, col. 3, lines 45-60.

limitations from claims 2, 10, 26, the method, wherein the polycrystalline layer comprises at least one element selected from the group consisting of silicon, germanium, carbon and combinations thereof, silicon, col. 3, lines 35-44.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-8, 11-17, 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida as applied to claims 1, 2, 9, 10, 25, 26 above, and further in view of Wolf, V. I.

Ishida does not specify the dopants used, but Wolf does. Wolf on pp. 264-5, Gaseous Sources, and Table 5, lists the method, limitations from claim 3, 11, wherein the dopant is selected from the group consisting of boron, phosphorous, arsenic and combinations thereof. Wolf gives motivation on p. 265, ¶ 2. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Wolf's process with Ishida's invention would have been beneficial because gas species are the most widely used sources for ion implantation, allowing the practitioner to buy in large quantities at lower costs.

For claims 4-8, 12-17, Ishida does not specify the dopant concentration, time or temperature of the anneals, or electrical resistivity of the polysilicon layer. For claim 13, although Ishida lists the laser anneal before the RTA, col. 3, line 35 - col. 4, line 6, the anneals are independent from time sequence. Further, Ishida states that such inconsequential changes are within the scope of his invention, col. 5, lines 26-45. Therefore, the practitioner may optimize these parameters, or inconsequential ordering.

"Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances,

however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art . . . such ranges are termed 'critical ranges' and the applicant has the burden of proving such criticality . . . More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."

In re Aller 105 USPQ 233, 255 (CCPA 1955). See also In re Waite 77 USPQ 586 (CCPA 1948); In re Scherl 70 USPQ 204 (CCPA 1946); In re Irmischer 66 USPQ 314 (CCPA 1945); In re Norman 66 USPQ 308 (CCPA 1945); In re Swenson 56 USPQ 372 (CCPA 1942); In re Sola 25 USPQ 433 (CCPA 1935); In re Dreyfus 24 USPQ 52 (CCPA 1934).

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claims 18, 19, 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida.

Ishida teaches, in fig. 2A, a method for annealing a doped layer on a substrate 50, comprising:
depositing a polycrystalline layer, containing a lattice, 56 to a gate oxide layer, to the substrate;

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in fig. 2B, implanting the polycrystalline layer with a dopant, labeled by arrows, to form a doped polycrystalline layer, col. 3, lines 35-44;

exposing the doped polycrystalline layer to a rapid thermal anneal, col. 3, lines 61-66;

and exposing the doped polycrystalline layer to a laser anneal, col. 3, lines 45-60.

limitations from claim 19, the method, wherein the polycrystalline layer comprises at least one element selected from the group consisting of silicon, germanium, carbon and combinations thereof, silicon, col. 3, lines 35-44.

For claims 21-24, Ishida does not specify the dopant concentration, time or temperature of the anneals, or electrical resistivity of the polysilicon layer. However, the practitioner may optimize these parameters.

"Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art . . . such ranges are termed 'critical ranges' and the applicant has the burden of proving such criticality . . . More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."

In re Aller 105 USPQ 233, 255 (CCPA 1955). See also In re Waite 77 USPQ 586 (CCPA 1948); In re Scherl 70 USPQ 204 (CCPA 1946); In re Irmischer 66 USPQ 314 (CCPA 1945); In re Norman 66 USPQ 308 (CCPA 1945); In re Swenson 56 USPQ 372 (CCPA 1942); In re Sola 25 USPQ 433 (CCPA 1935); In re Dreyfus 24 USPQ 52 (CCPA 1934).

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William M. Brewster

30 September 2005
WB